

## Open Literature Review Summary

**Chemical Name:** Imidacloprid

**CAS No:** 138261413

**MRID:** 47699422

### Record Number and Citation:

Schmuck, R., Schoning R. “Residues levels of imidacloprid and imidacloprid metabolites in nectar, blossom and pollen of sunflowers cultivated on soils with different imidacloprid residues levels and effects of these residues on foraging honeybees.”

### Summary of Study Findings:

This study was conducted in compliance to good laboratory practice. Sunflower seeds were dressed 0.5 U/ ha sunflower seed (I U = 150,000 seed). Samples were taken from soil, leaves, flowers, nectar, pollen (hive and flower) and honeybee exposed to sunflowers.

A combination of treatment plots were used to conduct the study, three of the treatment plots were sown with imidacloprid free seed in imidacloprid contaminated soil. The fourth plot was sown with gauchos seed in imidacloprid-free soil. The application history of the plots is at the end of summary.

Plots 1 -3 had levels of imidacloprid in the soil at 0.016, 0.013, and 0.014 mg/kg and levels below quantitation (LOQ) in all other areas. Plot 4 had levels of imidacloprid at 0.006 mg/kg in the levels and LOQ in all other samples.

Honeybee colonies were situated on sunflower plots during full bloom on all four separate fields. The bees were allowed to forage on sunflower for 15 days. Samples included: honeybees, sunflower nectar, pollen, sunflower flower and leaves. Imidacloprid was below level of detection for all samples.

Mortality in one of the treatment groups was 141 compared control and other treated plots of 11, 20 and 26 respectively.

The author concluded that no adverse effects seen in any of the treatment groups.

### Rationale for Use:

No adverse effects from imidacloprid to honeybees.

### Limitations of Study:

Lack of imidacloprid in the environment could correlate to no negative effects to honeybees.

\*\* With regard to imidacloprid, study plots received since 1996 the following treatments

- Control plot: untreated grass area since 1996. Drilled with imidacloprid-free sunflower seed on 12 May 1999

- Treatment plot 1.) - Variant „1997”: cropped in fall 1997 with Gaucho treated winter wheat (77 g ai/ha), sprayed on 24 April 1999 with 71.5 g/ha Gaucho WS 70 (= 50 g al/ha imidacloprid; batch no. 233 614 749, 72.5% imidacloprid according to FAR no. 559-0 1). Drilled with imidacloprid-free sunflower seed on 12 May 1999.

- Treatment 2.)- Variant „1998”: cropped in spring 1996 with Gaucho treated sugar beet (111 g ai/ha), followed in fall 1998 by Gaucho treated winter barley (49 g al/ha). Drilled with imidacloprid -free sunflower seed on 12 May 1999.

- Treatment 3.)- Variant „1998 (2x)”: cropped in spring 199\$ with Gaucho treated sugar beet (105 g al/ha) followed by Gaucho-treated winter wheat (76 g al/ha). Drilled with imidacloprid -free sunflower seed on 12 May 1999.

- Treatment 4.)- Variant „1999”: untreated grass area since 1996. Drilled with Gaucho WS 70 treated sunflower seed on 12 May 1999 (52 g al/ha).